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## SEQUENCE LISTING

<110> Cruz, Tony  
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Turley, Eva A.

<120> Compositions and Methods for Treating Cellular Response to  
Injury and Other Proliferating Cell Disorders Regulated by  
Hyaladherin and Hyaluronans

<130> 033352-010

<140> US 09/978,309

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<160> 83

<170> FastSEQ for Windows Version 4.0

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<223> Peptide that binds a hyalauronan

<221> VARIANT

<222> (1)...(5)

<223> Xaa = any amino acid

<221> HELIX

<222> (1)...(5)

<223> Alpha-helix

<221> VARIANT

<222> (6)...(8)

<223> Xaa = Lysine or Arginine

<400> 1

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa

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<223> Xaa = any amino acid

<221> HELIX

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<223> Alpha-helix

<221> VARIANT

<222> 6

<223> Xaa = Lysine or Arginine

<221> VARIANT

<222> 7

<223> Xaa = Hydrophobic or neutral amino acid consisting  
of I, L, V, Q, S

<221> VARIANT

<222> (8)...(9)

<223> Xaa = Lysine or Arginine

<221> VARIANT

<222> (10)...(10)

<223> Xaa = Hydrophobic or neutral amino acid consisting  
of I, L, V, Q, S

<221> VARIANT

<222> (11)...(11)

<223> Xaa = Lysine or Arginine

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Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
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<223> Xaa = any amino acid

<221> HELIX

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<223> Alpha-helix

<221> VARIANT

<222> 6  
 <223> Xaa = Lysine or Arginine

<221> VARIANT  
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 <223> Xaa = Hydrophobic or neutral amino acid consisting  
 of I, L, V, Q, S

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 <222> 8  
 <223> Xaa = Lysine or Arginine

<221> VARIANT  
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 <223> Xaa = Hydrophobic or neutral amino acid consisting  
 of I, L, V, Q, S

<221> VARIANT  
 <222> (10)...(12)  
 <223> Xaa = Lysine or Arginine

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 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
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 <223> Alpha-helix

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<221> VARIANT  
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 <223> Xaa = Hydrophobic or neutral amino acid consisting  
 of I, L, V, Q, S

<221> VARIANT  
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<221> HELIX  
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<221> VARIANT  
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 <223> Xaa = Lysine or Arginine

<221> VARIANT  
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 <223> Xaa = Hydrophobic or neutral amino acid consisting  
 of I, L, V, Q, S

<221> VARIANT  
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<221> HELIX  
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<400> 6  
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<221> HELIX

<222> (1)...(5)

<223> Alpha-helix

<400> 7

Met Met Thr Val Leu Lys Val Lys Arg Leu Arg  
1 5 10

<210> 8

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<212> PRT

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<221> HELIX

<222> (1)...(5)

<223> Alpha-helix

<400> 8

Met Met Thr Val Leu Lys Val Lys Val Lys Arg Lys  
1 5 10

<210> 9

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<221> HELIX

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Met Met Thr Val Leu Lys Val Arg Lys Arg  
1 5 10

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<221> HELIX

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 <223> Alpha-helix

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<210> 11  
 <211> 13  
 <212> PRT  
 <213> Homo sapien

<400> 11  
 Lys Leu Gln Ala Thr Gln Lys Pro Leu Thr Glu Ser Lys  
 1 5 10

<210> 12  
 <211> 12  
 <212> PRT  
 <213> Homo sapien

<400> 12  
 Val Ser Ile Glu Lys Glu Lys Ile Asp Glu Lys Ser  
 1 5 10

<210> 13  
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<220>  
 <223> Peptide developed based upon the TAM domain  
 (Transient Activator of MAP kinases)

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 <222> 3  
 <223> Xaa = any amino acid

<400> 13  
 Val Ser Xaa Glu Lys Glu  
 1 5

<210> 14  
 <211> 23  
 <212> PRT  
 <213> Mus musculus

<400> 14  
 Lys Leu Gln Ala Thr Gln Lys Asp Leu Thr Glu Ser Lys Gly Lys Ile  
 1 5 10 15  
 Val Gln Leu Glu Gly Lys Leu  
 20

<210> 15  
 <211> 14  
 <212> PRT  
 <213> Mus musculus

<400> 15  
 Lys Leu Gln Ala Thr Gln Lys Asp Leu Thr Glu Ser Lys Gly  
 1 5 10

<210> 16  
 <211> 25  
 <212> PRT  
 <213> Mus musculus

<400> 16  
 Val Ser Ile Glu Lys Glu Lys Ile Asp Glu Lys Cys Glu Thr Glu Lys  
 1 5 10 15  
 Leu Leu Glu Tyr Ile Gln Glu Ile Ser  
 20 25

<210> 17  
 <211> 12  
 <212> PRT  
 <213> Mus musculus

<220>  
 <221> VARIANT  
 <222> 12  
 <223> Xaa = Cysteine or Serine

<400> 17  
 Val Ser Ile Glu Lys Glu Lys Ile Asp Glu Lys Xaa  
 1 5 10

<210> 18  
 <211> 14  
 <212> PRT  
 <213> Homo sapien

<400> 18  
 Leu Lys Ser Lys Phe Ser Glu Asn Gly Asn Gln Lys Asn Leu  
 1 5 10

<210> 19  
 <211> 14  
 <212> PRT  
 <213> Homo sapien

<400> 19  
 Lys Leu Gln Val Thr Gln Arg Ser Leu Glu Glu Gln Lys Gly  
 1 5 10

<210> 20  
 <211> 14  
 <212> PRT  
 <213> Mus musculus

<400> 20  
 Leu Lys Ala Lys Phe Ser Glu Asp Gly His Gln Lys Asn Met  
 1 5 10

<210> 21  
 <211> 14  
 <212> PRT  
 <213> Mus musculus

<400> 21  
 Gln Glu Arg Gly Thr Gln Asp Lys Arg Ile Gln Asp Met Glu  
 1 5 10

<210> 22  
 <211> 21  
 <212> PRT  
 <213> Homo sapien

<400> 22  
 Gly Thr Leu Lys Leu Asp Lys Leu Gly Ser Gln Ala Asp Thr Gly Gln  
 1 5 10 15  
 Lys Glu Leu Lys Gln  
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<210> 23  
 <211> 20  
 <212> PRT  
 <213> Homo sapien

<400> 23  
 Glu Ser Thr Asn Gln Glu Tyr Ala Arg Met Val Gln Asp Leu Gln Asn  
 1 5 10 15  
 Arg Ser Thr Leu  
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<210> 24  
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 <212> PRT  
 <213> Homo sapien

<400> 24  
 Lys Leu Arg Ser Gln Leu Val Lys Arg Lys Gln  
 1 5 10

<210> 25  
 <211> 11  
 <212> PRT



<213> Artificial Sequence

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<223> Scrambled hyalauron binding peptide

<400> 25

Arg Gln Lys Val Leu Lys Arg Gln Leu Lys Ser  
1 5 10

<210> 26

<211> 16

<212> PRT

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<223> Peptide that binds a hyalauronan

<400> 26

Cys Ser Thr Met Met Ser Arg Ser His Lys Thr Arg Ser His His Val  
1 5 10 15

<210> 27

<211> 9

<212> PRT

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<220>

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<400> 27

Arg Gly Gly Gly Arg Gly Arg Arg Arg  
1 5

<210> 28

<211> 9

<212> PRT

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<223> Peptide composition that binds a hyalauronan

<221> VARIANT

<222> 1

<223> Xaa = Any basic amino acid

<221> VARIANT

<222> (2)...(8)

<223> Xaa = Any amino acid other than an acidic amino acid

<221> HELIX

<222> (2)...(8)

<223> Alpha-helix

<221> VARIANT

<222> 9

<223> Xaa = Any basic amino acid

<400> 28

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<211> 11

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<222> (1)...(2)

<223> Xaa = any basic amino acid

<221> VARIANT

<222> (3)...(4)

<223> Xaa = any amino acid other than an acidic amino acid

<221> VARIANT

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<223> Xaa = any basic amino acid

<221> VARIANT

<222> (8)...(9)

<223> Xaa = any amino acid other than an acidic amino acid

<221> VARIANT

<222> (10)...(11)

<223> Xaa = any basic amino acid

<400> 29

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa

1

5

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<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Peptide composition that binds a hyalauronan

<400> 30

Lys Gln Lys Ile Lys His Val Val Lys Leu Lys

1

5

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<210> 31  
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<220>  
 <223> Peptide composition that binds a hyalauronan

<400> 31  
 Lys Leu Lys Ser Gln Leu Val Lys Arg Lys  
 1 5 10

<210> 32  
 <211> 10  
 <212> PRT  
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<220>  
 <223> Peptide composition that binds a hyalauronan

<400> 32  
 Arg Tyr Pro Ile Ser Arg Pro Arg Lys Arg  
 1 5 10

<210> 33  
 <211> 9  
 <212> PRT  
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<220>  
 <223> Peptide composition that binds a hyalauronan

<400> 33  
 Lys Asn Gly Arg Tyr Ser Ile Ser Arg  
 1 5

<210> 34  
 <211> 13  
 <212> PRT  
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<220>  
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<400> 34  
 Arg Asp Gly Thr Arg Tyr Val Gln Lys Gly Glu Tyr Arg  
 1 5 10

<210> 35  
 <211> 9  
 <212> PRT  
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<220>  
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<400> 35  
 Arg Arg Arg Cys Gly Gln Lys Lys Lys  
 1 5

<210> 36  
 <211> 9  
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<220>  
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<400> 36  
 Arg Gly Thr Arg Ser Gly Ser Thr Arg  
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<210> 37  
 <211> 12  
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<220>  
 <223> Peptide composition that binds a hyalauronan

<400> 37  
 Arg Arg Arg Lys Lys Ile Gln Gly Arg Ser Lys Arg  
 1 5 10

<210> 38  
 <211> 10  
 <212> PRT  
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<220>  
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<400> 38  
 Arg Lys Ser Tyr Gly Lys Tyr Gln Gly Arg  
 1 5 10

<210> 39  
 <211> 9  
 <212> PRT  
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<220>  
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<400> 39  
 Lys Val Gly Lys Ser Pro Pro Val Arg

1

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&lt;210&gt; 40

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Peptide composition that binds a hyalauronan

&lt;400&gt; 40

Lys Thr Phe Gly Lys Met Lys Pro Arg

1

5

&lt;210&gt; 41

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Peptide composition that binds a hyalauronan

&lt;400&gt; 41

Arg Ile Lys Trp Ser Arg Val Ser Lys

1

5

&lt;210&gt; 42

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Peptide composition that binds a hyalauronan

&lt;400&gt; 42

Lys Arg Thr Met Arg Pro Thr Arg Arg

1

5

&lt;210&gt; 43

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Peptide composition that binds a hyalauronan

&lt;400&gt; 43

Lys Val Gly Lys Ser Pro Pro Val Arg

1

5

&lt;210&gt; 44

&lt;211&gt; 10

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Peptide composition that binds a hyalauronan

&lt;400&gt; 44

His Arg Glu Ala Arg Ser Gly Lys Tyr Lys  
 1 5 10

&lt;210&gt; 45

&lt;211&gt; 588

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)...(486)

&lt;400&gt; 45

gaa ttc gcg gcg gcg tcg acc aac aag ccc cct gct gtt tcc ccg ggg 48  
 Glu Phe Ala Ala Ala Ser Thr Asn Lys Pro Pro Ala Val Ser Pro Gly  
 1 5 10 15

gtg gtc tcc cca acc ttt gaa ctt aca aat ctt cta aat cat cct gac 96  
 Val Val Ser Pro Thr Phe Glu Leu Thr Asn Leu Leu Asn His Pro Asp  
 20 25 30

cat tat gta gaa aca gag aac att cag cat ctc aca gac ccg gct cta 144  
 His Tyr Val Glu Thr Glu Asn Ile Gln His Leu Thr Asp Pro Ala Leu  
 35 40 45

gca cat gtg gat aga ata agc caa gcc cgg aaa ctg agt atg gga tct 192  
 Ala His Val Asp Arg Ile Ser Gln Ala Arg Lys Leu Ser Met Gly Ser  
 50 55 60

gat gat gct gcc tac aca caa gct ctg ctg gtg cac cag aag gcc aag 240  
 Asp Asp Ala Ala Tyr Thr Gln Ala Leu Leu Val His Gln Lys Ala Lys  
 65 70 75 80

atg gaa cgg ctt caa aga gag ctc gag atg caa aag aaa aag ctg gat 288  
 Met Glu Arg Leu Gln Arg Glu Leu Glu Met Gln Lys Lys Lys Leu Asp  
 85 90 95

aaa ctc aaa tct gag gtc aat gag atg gaa aat aat cta act cga agg 336  
 Lys Leu Lys Ser Glu Val Asn Glu Met Glu Asn Asn Leu Thr Arg Arg  
 100 105 110

cgc ctg aag aga tca aat tcc att tcc cag ata ccg tca ctc gaa gaa 384  
 Arg Leu Lys Arg Ser Asn Ser Ile Ser Gln Ile Pro Ser Leu Glu Glu  
 115 120 125

atg cag cag ttg aga agt tgt aat aga caa ctc cag att gac att gac 432  
 Met Gln Gln Leu Arg Ser Cys Asn Arg Gln Leu Gln Ile Asp Ile Asp  
 130 135 140

ttt gac tgc tta acc aaa gaa att gca tct ttt tca agc ccg agg acc 480  
 Phe Asp Cys Leu Thr Lys Glu Ile Ala Ser Phe Ser Ser Pro Arg Thr  
 145 150 155 160

aca ttt taaccccagc gctattcata acttttatga caatattgga tttgtaggcc 536  
 Thr Phe

ctgtgccacc aaaacccaaa gatcaaaggt ccaccatcaa aggtcgacgc gg 588

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 <211> 162  
 <212> PRT  
 <213> Homo sapien

<400> 46  
 Glu Phe Ala Ala Ala Ser Thr Asn Lys Pro Pro Ala Val Ser Pro Gly  
 1 5 10 15  
 Val Val Ser Pro Thr Phe Glu Leu Thr Asn Leu Leu Asn His Pro Asp  
 20 25 30  
 His Tyr Val Glu Thr Glu Asn Ile Gln His Leu Thr Asp Pro Ala Leu  
 35 40 45  
 Ala His Val Asp Arg Ile Ser Gln Ala Arg Lys Leu Ser Met Gly Ser  
 50 55 60  
 Asp Asp Ala Ala Tyr Thr Gln Ala Leu Leu Val His Gln Lys Ala Lys  
 65 70 75 80  
 Met Glu Arg Leu Gln Arg Glu Leu Glu Met Gln Lys Lys Lys Leu Asp  
 85 90 95  
 Lys Leu Lys Ser Glu Val Asn Glu Met Glu Asn Asn Leu Thr Arg Arg  
 100 105 110  
 Arg Leu Lys Arg Ser Asn Ser Ile Ser Gln Ile Pro Ser Leu Glu Glu  
 115 120 125  
 Met Gln Gln Leu Arg Ser Cys Asn Arg Gln Leu Gln Ile Asp Ile Asp  
 130 135 140  
 Phe Asp Cys Leu Thr Lys Glu Ile Ala Ser Phe Ser Ser Pro Arg Thr  
 145 150 155 160  
 Thr Phe

<210> 47  
 <211> 725  
 <212> PRT  
 <213> Homo sapien

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 Pro Met Ser Phe Pro Lys Ala Pro Leu Lys Arg Phe Asn Asp Pro Ser  
 1 5 10 15  
 Gly Cys Ala Pro Ser Pro Gly Ala Asp Val Lys Thr Leu Glu Val Leu  
 20 25 30  
 Lys Gly Pro Val Ser Phe Gln Lys Ser Gln Arg Phe Lys Gln Gln Lys  
 35 40 45  
 Glu Ser Lys Gln Asn Leu Asn Val Asp Lys Asp Thr Thr Leu Pro Ala  
 50 55 60  
 Ser Ala Arg Lys Val Lys Ser Ser Glu Ser Lys Lys Glu Ser Gln Lys  
 65 70 75 80  
 Asn Asp Lys Asp Leu Lys Ile Leu Glu Lys Glu Ile Arg Val Leu Leu





Leu Lys Gln Gln Glu Glu Asp Phe Arg Lys Gln Leu Glu Asp Glu Glu  
 545 550 555 560  
 Gly Arg Lys Ala Glu Lys Glu Asn Thr Thr Ala Glu Leu Thr Glu Glu  
 565 570 575  
 Ile Asn Lys Trp Arg Leu Leu Tyr Glu Glu Leu Tyr Asn Lys Thr Lys  
 580 585 590  
 Pro Phe Gln Leu Gln Leu Asp Ala Phe Glu Val Glu Lys Gln Ala Leu  
 595 600 605  
 Leu Asn Glu His Gly Ala Ala Gln Glu Gln Leu Asn Lys Ile Arg Asp  
 610 615 620  
 Ser Tyr Ala Lys Leu Leu Gly His Gln Asn Leu Lys Gln Lys Ile Lys  
 625 630 635 640  
 His Val Val Lys Leu Lys Asp Glu Asn Ser Gln Leu Lys Ser Glu Val  
 645 650 655  
 Ser Lys Leu Arg Cys Gln Leu Ala Lys Lys Lys Gln Ser Glu Thr Lys  
 660 665 670  
 Leu Gln Glu Glu Leu Asn Lys Val Leu Gly Ile Lys His Phe Asp Pro  
 675 680 685  
 Ser Lys Ala Phe His His Glu Ser Lys Glu Asn Phe Ala Leu Lys Thr  
 690 695 700  
 Pro Leu Lys Glu Gly Asn Thr Asn Cys Tyr Arg Ala Pro Met Glu Cys  
 705 710 715 720  
 Gln Glu Ser Trp Lys  
 725

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 <211> 631  
 <212> PRT  
 <213> Homo sapien

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 Glu Thr Lys Met Arg Ser Met Met Val Lys Gln Glu Gly Met Glu Leu  
 20 25 30  
 Lys Leu Gln Ala Thr Gln Lys Asp Leu Thr Glu Ser Lys Gly Lys Ile  
 35 40 45  
 Val Gln Leu Glu Gly Lys Leu Val Ser Ile Glu Lys Glu Lys Ile Asp  
 50 55 60  
 Glu Lys Cys Glu Thr Glu Lys Leu Leu Glu Tyr Ile Gln Glu Ile Ser  
 65 70 75 80  
 Cys Ala Ser Asp Gln Val Glu Lys Cys Lys Val Asp Ile Ala Gln Leu  
 85 90 95  
 Glu Glu Asp Leu Lys Glu Lys Asp Arg Glu Ile Leu Ser Leu Lys Gln  
 100 105 110  
 Ser Leu Glu Glu Asn Ile Thr Phe Ser Lys Gln Ile Glu Asp Leu Thr  
 115 120 125  
 Val Lys Cys Gln Leu Leu Glu Thr Glu Arg Asn Asp Leu Val Ser Lys  
 130 135 140  
 Asp Arg Glu Arg Ala Glu Thr Leu Ser Ala Glu Met Gln Ile Leu Thr  
 145 150 155 160  
 Glu Arg Leu Ala Leu Glu Arg Gln Glu Tyr Glu Lys Leu Gln Gln Lys  
 165 170 175  
 Glu Leu Gln Ser Gln Ser Leu Leu Gln Glu Lys Glu Leu Ser Ala  
 180 185 190  
 Arg Leu Gln Gln Gln Leu Cys Ser Phe Gln Glu Glu Met Thr Ser Glu

Lys	Asn	Val	Phe	Lys	Glu	Glu	Leu	Lys	Leu	Ala	Leu	Ala	Glu	Leu	Asp	
	210					215					220					
Ala	Val	Gln	Gln	Lys	Glu	Glu	Gln	Ser	Glu	Arg	Leu	Val	Lys	Gln	Leu	
225					230					235						240
Glu	Glu	Glu	Arg	Lys	Ser	Thr	Ala	Glu	Gln	Leu	Thr	Arg	Leu	Asp	Asn	
				245					250					255		
Leu	Leu	Arg	Glu	Lys	Glu	Val	Glu	Leu	Glu	Lys	His	Ile	Ala	Ala	His	
			260					265					270			
Ala	Gln	Ala	Ile	Leu	Ile	Ala	Gln	Glu	Lys	Tyr	Asn	Asp	Thr	Ala	Gln	
		275					280					285				
Ser	Leu	Arg	Asp	Val	Thr	Ala	Gln	Leu	Glu	Ser	Val	Gln	Glu	Lys	Tyr	
	290					295					300					
Asn	Asp	Thr	Ala	Gln	Ser	Leu	Arg	Asp	Val	Thr	Ala	Gln	Leu	Glu	Ser	
305					310					315					320	
Glu	Gln	Glu	Lys	Tyr	Asn	Asp	Thr	Ala	Gln	Ser	Leu	Arg	Asp	Val	Thr	
				325					330					335		
Ala	Gln	Leu	Glu	Ser	Glu	Gln	Glu	Lys	Tyr	Asn	Asp	Thr	Ala	Gln	Ser	
			340					345					350			
Leu	Arg	Asp	Val	Thr	Ala	Gln	Leu	Glu	Ser	Gln	Glu	Lys	Tyr	Asn	Asp	
		355					360					365				
Thr	Ala	Gln	Ser	Leu	Arg	Asp	Val	Thr	Ala	Gln	Leu	Glu	Ser	Tyr	Lys	
	370					375					380					
Ser	Ser	Thr	Leu	Lys	Glu	Ile	Glu	Asp	Leu	Lys	Leu	Glu	Asn	Leu	Thr	
385					390				395						400	
Leu	Gln	Glu	Lys	Val	Ala	Met	Ala	Glu	Lys	Ser	Val	Glu	Asp	Val	Gln	
				405					410					415		
Gln	Gln	Ile	Leu	Thr	Ala	Glu	Ser	Thr	Asn	Gln	Glu	Tyr	Ala	Arg	Met	
			420					425					430			
Val	Gln	Asp	Leu	Gln	Asn	Arg	Ser	Thr	Leu	Lys	Glu	Glu	Glu	Ile	Lys	
		435					440					445				
Glu	Ile	Thr	Ser	Ser	Phe	Leu	Glu	Lys	Ile	Thr	Asp	Leu	Lys	Asn	Gln	
	450					455					460					
Leu	Arg	Gln	Gln	Asp	Glu	Asp	Phe	Arg	Lys	Gln	Leu	Glu	Glu	Lys	Gly	
465					470				475						480	
Lys	Arg	Thr	Ala	Glu	Lys	Glu	Asn	Val	Met	Thr	Glu	Leu	Thr	Met	Glu	
				485				490						495		
Ile	Asn	Lys	Trp	Arg	Leu	Leu	Tyr	Glu	Glu	Leu	Tyr	Glu	Lys	Thr	Lys	
			500					505					510			
Pro	Phe	Gln	Gln	Gln	Leu	Asp	Ala	Phe	Glu	Ala	Glu	Lys	Gln	Ala	Leu	
		515					520					525				

<210> 49  
 <211> 11  
 <212> PRT  
 <213> Homo sapien

<400> 49  
 Val Ser Ile Glu Lys Glu Lys Ile Asp Glu Lys  
 1 5 10

<210> 50  
 <211> 21  
 <212> PRT  
 <213> Unknown

<220>  
 <223> Peptide used in competition binding assay

<400> 50  
 Gln Glu Lys Tyr Asn Asp Thr Ala Gln Ser Leu Arg Asp Val Thr Ala  
 1 5 10 15  
 Gln Leu Glu Ser Val  
 20

<210> 51  
 <211> 32  
 <212> PRT  
 <213> Unknown

<220>  
 <223> Peptide used in competition binding assay

<400> 51  
 Lys Gln Lys Ile Lys His Val Val Lys Leu Lys Asp Glu Asn Ser Gln  
 1 5 10 15  
 Leu Lys Ser Glu Val Ser Lys Leu Arg Ser Gln Leu Val Lys Arg Lys  
 20 25 30

<210> 52  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Primer for PCR amplification of collagen I

<400> 52  
 cgatgtcgct atccagctga

20

<210> 53  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Primer for PCR amplication of collagen III

<400> 53

atcagtcagc catctaccac c

21

<210> 54

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer for PCR amplication of ED-1

<400> 54

tggcaggaca gtagtcgc

18

<210> 55

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer for PCR amplication of ED-1

<400> 55

aaggctgctg ttgaaaggac g

21

<210> 56

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Peptide that binds a hyalauronan

<400> 56

Arg Gly Gly Gly Arg Gly Gly Arg Arg

1

5

<210> 57

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Peptide that binds a hyalauronan

<400> 57

Arg Gly Gly Gly Arg Gly Gly Gly Arg

1

5

<210> 58

<211> 9

<212> PRT

<213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; Peptide that binds a hyalauronan

&lt;400&gt; 58

Arg Gly Gly Gly Gly Gly Gly Arg

1

5

&lt;210&gt; 59

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Homo sapien

&lt;400&gt; 59

Lys Leu Arg Ser Gln Leu Val Lys Arg

1

5

&lt;210&gt; 60

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Homo sapien

&lt;400&gt; 60

Lys Gln Lys Ile Lys His Val Val Lys

1

5

&lt;210&gt; 61

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Homo sapien

&lt;400&gt; 61

Arg Ser His Lys Thr Arg Ser His His

1

5

&lt;210&gt; 62

&lt;211&gt; 7

&lt;212&gt; PRT

&lt;213&gt; Homo sapien

&lt;400&gt; 62

Arg Pro His Phe His Lys Arg

1

5

&lt;210&gt; 63

&lt;211&gt; 11

&lt;212&gt; PRT

&lt;213&gt; Homo sapien

&lt;400&gt; 63

Arg Lys Ile Gln Lys His Lys Thr Ile Pro Lys

1

5

10

<210> 64  
<211> 9  
<212> PRT  
<213> Homo sapien

<400> 64  
Lys Val Gly Arg Lys Val Phe Ser Lys  
1 5

<210> 65  
<211> 9  
<212> PRT  
<213> Homo sapien

<400> 65  
Lys Cys Ser Val Gln Thr Leu Leu Arg  
1 5

<210> 66  
<211> 9  
<212> PRT  
<213> Homo sapien

<400> 66  
Arg Thr His Leu Lys His Val Leu Arg  
1 5

<210> 67  
<211> 9  
<212> PRT  
<213> Homo sapien

<400> 67  
Lys Asn Ala Ile Asn Asn Gly Val Arg  
1 5

<210> 68  
<211> 9  
<212> PRT  
<213> Homo sapien

<400> 68  
Lys Gly Gln Ile Asn Asn Ser Ile Lys  
1 5

<210> 69  
<211> 9  
<212> PRT  
<213> Homo sapien

<400> 69  
Arg Val Arg Gly Arg Ala Lys Leu Arg

1

5

<210> 70  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Peptide that binds a hyalauronan

<400> 70  
 Ser Thr Met Met Ser Arg Ser His Lys Thr Arg Ser His His Val  
 1 5 10 15

<210> 71  
 <211> 32  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Peptide that binds a hyalauronan

<400> 71  
 Cys Ser Thr Met Met Ser Arg Ser His Lys Thr Arg Ser His His Val  
 1 5 10 15  
 Cys Ser Thr Met Met Ser Arg Ser His Lys Thr Arg Ser His His Val  
 20 25 30

<210> 72  
 <211> 12  
 <212> PRT  
 <213> Homo sapien

<400> 72  
 Gly Ala His Trp Gln Phe Asn Ala Leu Thr Val Arg  
 1 5 10

<210> 73  
 <211> 333  
 <212> PRT  
 <213> Mus musculus

<400> 73  
 Ala Gln Ala Ile Leu Ile Ala Gln Glu Lys Tyr Asn Asp Thr Ala Gln  
 1 5 10 15  
 Ser Leu Arg Asp Val Thr Ala Gln Leu Glu Ser Val Gln Glu Lys Tyr  
 20 25 30  
 Asn Asp Thr Ala Gln Ser Leu Arg Asp Val Thr Ala Gln Leu Glu Ser  
 35 40 45  
 Glu Gln Glu Lys Tyr Asn Asp Thr Ala Gln Ser Leu Arg Asp Val Thr  
 50 55 60  
 Ala Gln Leu Glu Ser Glu Gln Glu Lys Tyr Asn Asp Thr Ala Gln Ser  
 65 70 75 80

```

Leu Arg Asp Val Thr Ala Gln Leu Glu Ser Val Gln Glu Lys Tyr Asn
      85                      90                      95
Asp Thr Ala Gln Ser Leu Arg Asp Val Ser Ala Gln Leu Glu Ser Tyr
      100                    105                    110
Lys Ser Ser Thr Leu Lys Glu Ile Glu Asp Leu Lys Leu Glu Asn Leu
      115                    120                    125
Thr Leu Gln Glu Lys Val Ala Met Ala Glu Lys Ser Val Glu Asp Val
      130                    135                    140
Gln Gln Gln Ile Leu Thr Ala Glu Ser Thr Asn Gln Glu Tyr Ala Arg
      145                    150                    155                    160
Met Val Gln Asp Leu Gln Asn Arg Ser Thr Leu Lys Glu Glu Glu Ile
      165                    170                    175
Lys Glu Ile Thr Ser Ser Phe Leu Glu Lys Ile Thr Asp Leu Lys Asn
      180                    185                    190
Gln Leu Arg Gln Gln Asp Glu Asp Phe Arg Lys Gln Leu Glu Glu Lys
      195                    200                    205
Gly Lys Arg Thr Ala Glu Lys Glu Asn Val Met Thr Glu Leu Thr Met
      210                    215                    220
Glu Ile Asn Lys Trp Arg Leu Leu Tyr Glu Glu Leu Tyr Glu Lys Thr
      225                    230                    235                    240
Lys Pro Phe Gln Gln Gln Leu Asp Ala Phe Glu Ala Glu Lys Gln Ala
      245                    250                    255
Leu Leu Asn Glu His Gly Ala Thr Gln Glu Gln Leu Asn Lys Ile Arg
      260                    265                    270
Asp Ser Tyr Ala Gln Leu Leu Gly His Gln Asn Leu Lys Gln Lys Ile
      275                    280                    285
Lys His Val Val Lys Leu Lys Asp Glu Asn Ser Gln Leu Lys Ser Glu
      290                    295                    300
Val Ser Lys Leu Arg Ser Gln Leu Val Lys Arg Lys Gln Asn Glu Leu
      305                    310                    315                    320
Arg Leu Gln Gly Glu Leu Asp Lys Ala Leu Gly Ile Arg
      325                    330

```

<210> 74  
 <211> 242  
 <212> PRT  
 <213> Homo sapien

```

<400> 74
Gln Glu Lys Tyr Asp Ser Met Val Gln Ser Leu Glu Asp Val Thr Ala
  1      5      10      15
Gln Phe Glu Ser Tyr Lys Ala Leu Thr Ala Ser Glu Ile Glu Asp Leu
  20      25      30
Lys Leu Glu Asn Ser Ser Leu Gln Glu Lys Ala Ala Lys Ala Gly Lys
  35      40      45
Asn Ala Glu Asp Val Gln His Gln Ile Leu Ala Thr Glu Ser Ser Asn
  50      55      60
Gln Glu Tyr Val Arg Met Leu Leu Asp Leu Gln Thr Lys Ser Ala Leu
  65      70      75      80
Lys Glu Thr Glu Ile Lys Glu Ile Thr Val Ser Phe Leu Gln Lys Ile
  85      90      95
Thr Asp Leu Gln Asn Gln Leu Lys Gln Gln Glu Glu Asp Phe Arg Lys
  100     105     110
Gln Leu Glu Asp Glu Glu Gly Arg Lys Ala Glu Lys Glu Asn Thr Thr
  115     120     125
Ala Glu Leu Thr Glu Glu Ile Asn Lys Trp Arg Leu Leu Tyr Glu Glu

```



```

      130              135              140
Leu Tyr Asn Lys Thr Lys Pro Phe Gln Ile Gln Leu Asp Ala Phe Glu
145              150              155              160
Val Glu Lys Gln Ala Leu Leu Asn Glu His Gly Ala Ala Gln Glu Gln
      165              170              175
Leu Asn Lys Ile Arg Asp Ser Tyr Ala Lys Leu Leu Gly His Gln Asn
      180              185              190
Leu Lys Gln Lys Ile Lys His Val Val Lys Leu Lys Asp Glu Asn Ser
      195              200              205
Gln Leu Lys Ser Glu Val Ser Lys Leu Arg Cys Gln Leu Ala Lys Lys
      210              215              220
Lys Gln Ser Glu Thr Lys Leu Gln Glu Glu Leu Asn Lys Val Leu Gly
225              230              235              240
Ile Lys

```

```

<210> 75
<211> 221
<212> PRT
<213> Mus musculus

```

```

<400> 75
Lys Ser Ser Thr Leu Lys Glu Ile Glu Asp Leu Lys Leu Glu Asn Leu
1      5      10      15
Thr Leu Gln Glu Lys Val Ala Met Ala Glu Lys Ser Val Glu Asp Val
      20      25      30
Gln Gln Gln Ile Leu Thr Ala Glu Ser Thr Asn Gln Glu Tyr Ala Arg
      35      40      45
Met Val Gln Asp Leu Gln Asn Arg Ser Thr Leu Lys Glu Glu Glu Ile
      50      55      60
Lys Glu Ile Thr Ser Ser Phe Leu Glu Lys Ile Thr Asp Leu Lys Asn
      65      70      75      80
Gln Leu Arg Gln Gln Asp Glu Asp Phe Arg Lys Gln Leu Glu Glu Lys
      85      90      95
Gly Lys Arg Thr Ala Glu Lys Glu Asn Val Met Thr Glu Leu Thr Met
      100      105      110
Glu Ile Asn Lys Trp Arg Leu Leu Tyr Glu Glu Leu Tyr Glu Lys Thr
      115      120      125
Lys Pro Phe Gln Gln Gln Leu Asp Ala Phe Glu Ala Glu Lys Gln Ala
      130      135      140
Leu Leu Asn Glu His Gly Ala Thr Gln Glu Gln Leu Asn Lys Ile Arg
      145      150      155      160
Asp Ser Tyr Ala Gln Leu Leu Gly His Gln Asn Leu Lys Gln Lys Ile
      165      170      175
Lys His Val Val Lys Leu Lys Asp Glu Asn Ser Gln Leu Lys Ser Glu
      180      185      190
Val Ser Lys Leu Arg Ser Gln Leu Val Lys Arg Lys Gln Asn Glu Leu
      195      200      205
Arg Leu Gln Gly Glu Leu Asp Lys Ala Leu Gly Ile Arg
      210      215      220

```

```

<210> 76
<211> 221
<212> PRT
<213> Homo sapien

```

&lt;400&gt; 76

Lys Ala Leu Thr Ala Ser Glu Ile Glu Asp Leu Lys Leu Glu Asn Ser  
 1 5 10 15  
 Ser Leu Gln Glu Lys Ala Ala Lys Ala Gly Lys Asn Ala Glu Asp Val  
 20 25 30  
 Gln His Gln Ile Leu Ala Thr Glu Ser Ser Asn Gln Glu Tyr Val Arg  
 35 40 45  
 Met Leu Leu Asp Leu Gln Thr Lys Ser Ala Leu Lys Glu Thr Glu Ile  
 50 55 60  
 Lys Glu Ile Thr Val Ser Phe Leu Gln Lys Ile Thr Asp Leu Gln Asn  
 65 70 75 80  
 Gln Leu Lys Gln Gln Glu Glu Asp Phe Arg Lys Gln Leu Glu Asp Glu  
 85 90 95  
 Glu Gly Arg Lys Ala Glu Lys Glu Asn Thr Thr Ala Glu Leu Thr Glu  
 100 105 110  
 Glu Ile Asn Lys Trp Arg Leu Leu Tyr Glu Glu Leu Tyr Asn Lys Thr  
 115 120 125  
 Lys Pro Phe Gln Ile Gln Leu Asp Ala Phe Glu Val Glu Lys Gln Ala  
 130 135 140  
 Leu Leu Asn Glu His Gly Ala Ala Gln Glu Gln Leu Asn Lys Ile Arg  
 145 150 155 160  
 Asp Ser Tyr Ala Lys Leu Leu Gly His Gln Asn Leu Lys Gln Lys Ile  
 165 170 175  
 Lys His Val Val Lys Leu Lys Asp Glu Asn Ser Gln Leu Lys Ser Glu  
 180 185 190  
 Val Ser Lys Leu Arg Cys Gln Leu Ala Lys Lys Lys Gln Ser Glu Thr  
 195 200 205  
 Lys Leu Gln Glu Glu Leu Asn Lys Val Leu Gly Ile Lys  
 210 215 220

&lt;210&gt; 77

&lt;211&gt; 476

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 77

Met Gln Ile Leu Thr Glu Arg Leu Ala Leu Glu Arg Gln Glu Tyr Glu  
 1 5 10 15  
 Lys Leu Gln Gln Lys Glu Leu Gln Ser Gln Ser Leu Leu Gln Gln Glu  
 20 25 30  
 Lys Glu Leu Ser Ala Arg Leu Gln Gln Gln Leu Cys Ser Phe Gln Glu  
 35 40 45  
 Glu Met Thr Ser Glu Lys Asn Val Phe Lys Glu Glu Leu Lys Leu Ala  
 50 55 60  
 Leu Glu Leu Asp Ala Val Gln Gln Lys Glu Glu Gln Ser Glu Arg Leu  
 65 70 75 80  
 Val Lys Gln Leu Glu Glu Glu Arg Lys Ser Thr Ala Glu Gln Leu Thr  
 85 90 95  
 Arg Leu Asp Asn Leu Leu Arg Glu Lys Glu Val Glu Leu Glu Lys His  
 100 105 110  
 Ile Ala Ala His Ala Gln Ala Ile Leu Ile Ala Gln Glu Lys Tyr Asn  
 115 120 125  
 Asp Thr Ala Gln Ser Leu Arg Asp Val Thr Ala Gln Leu Glu Ser Val  
 130 135 140  
 Gln Glu Lys Tyr Asn Asp Thr Ala Gln Ser Leu Arg Asp Val Thr Ala  
 145 150 155 160

Gln Leu Glu Ser Glu Gln Glu Lys Tyr Asn Asp Thr Ala Gln Ser Leu  
 165 170 175  
 Arg Asp Val Thr Ala Gln Leu Glu Ser Glu Gln Glu Lys Tyr Asn Asp  
 180 185 190  
 Thr Ala Gln Ser Leu Arg Asp Val Thr Ala Gln Leu Glu Ser Val Gln  
 195 200 205  
 Glu Lys Tyr Asn Asp Thr Ala Gln Ser Leu Arg Asp Val Ser Ala Gln  
 210 215 220  
 Leu Glu Ser Tyr Lys Ser Ser Thr Leu Lys Glu Ile Glu Asp Leu Lys  
 225 230 235 240  
 Leu Glu Asn Leu Thr Leu Gln Glu Lys Val Ala Met Ala Glu Lys Ser  
 245 250 255  
 Val Glu Asp Val Gln Gln Gln Ile Leu Thr Ala Glu Ser Thr Asn Gln  
 260 265 270  
 Glu Tyr Ala Arg Met Val Gln Asp Leu Gln Asn Arg Ser Thr Leu Lys  
 275 280 285  
 Glu Glu Glu Ile Lys Glu Ile Thr Ser Ser Phe Leu Glu Lys Ile Thr  
 290 295 300  
 Asp Leu Lys Asn Gln Leu Arg Gln Gln Asp Glu Asp Phe Arg Lys Gln  
 305 310 315 320  
 Leu Glu Glu Lys Gly Lys Arg Thr Ala Glu Lys Glu Asn Val Met Thr  
 325 330 335  
 Glu Leu Thr Met Glu Ile Asn Lys Trp Arg Leu Leu Tyr Glu Glu Leu  
 340 345 350  
 Tyr Glu Lys Thr Lys Pro Phe Gln Gln Gln Leu Asp Ala Phe Glu Ala  
 355 360 365  
 Glu Lys Gln Ala Leu Leu Asn Glu His Gly Ala Thr Gln Glu Gln Leu  
 370 375 380  
 Asn Lys Ile Arg Asp Ser Tyr Ala Gln Leu Leu Gly His Gln Asn Leu  
 385 390 395 400  
 Lys Gln Lys Ile Lys His Val Val Lys Leu Lys Asp Glu Asn Ser Gln  
 405 410 415  
 Leu Lys Ser Glu Val Ser Lys Leu Arg Ser Gln Leu Val Lys Arg Lys  
 420 425 430  
 Gln Asn Glu Leu Arg Leu Gln Gly Glu Leu Asp Lys Ala Leu Gly Ile  
 435 440 445  
 Arg His Phe Asp Pro Ser Lys Ala Phe Cys His Ala Ser Lys Glu Asn  
 450 455 460  
 Phe Thr Pro Leu Lys Glu Gly Asn Pro Asn Cys Cys  
 465 470 475

<210> 78  
 <211> 407  
 <212> PRT  
 <213> Homo sapien

<400> 78  
 Met Gln Asn Leu Lys Gln Lys Phe Ile Leu Glu Gln Gln Glu His Glu  
 1 5 10 15  
 Lys Leu Gln Gln Lys Glu Leu Gln Ile Asp Ser Leu Leu Gln Gln Glu  
 20 25 30  
 Lys Glu Leu Ser Ser Ser Leu His Gln Lys Leu Cys Ser Phe Gln Glu  
 35 40 45  
 Glu Met Val Lys Glu Lys Asn Leu Phe Glu Glu Glu Leu Lys Gln Thr  
 50 55 60  
 Leu Asp Glu Leu Asp Lys Leu Gln Gln Lys Glu Glu Gln Ala Glu Arg

65                      70                      75                      80  
 Leu Val Lys Gln Leu Glu Glu Glu Ala Lys Ser Arg Ala Glu Glu Leu  
                                  85                      90                      95  
 Lys Leu Leu Glu Glu Lys Leu Lys Gly Lys Glu Ala Glu Leu Glu Lys  
                                  100                      105                      110  
 Ser Ser Ala Ala His Thr Gln Ala Thr Leu Leu Leu Gln Glu Lys Tyr  
                                  115                      120                      125  
 Asp Ser Met Val Gln Ser Leu Glu Asp Val Thr Ala Gln Phe Glu Ser  
                                  130                      135                      140  
 Tyr Lys Ala Leu Thr Ala Ser Glu Ile Glu Asp Leu Lys Leu Glu Asn  
 145                                   150                      155                      160  
 Ser Ser Leu Gln Glu Lys Ala Ala Lys Ala Gly Lys Asn Ala Glu Asp  
                                  165                      170                      175  
 Val Gln His Gln Ile Leu Ala Thr Glu Ser Ser Asn Gln Glu Tyr Val  
                                  180                      185                      190  
 Arg Met Leu Leu Asp Leu Gln Thr Lys Ser Ala Leu Lys Glu Thr Glu  
                                  195                      200                      205  
 Ile Lys Glu Ile Thr Val Ser Phe Leu Gln Lys Ile Thr Asp Leu Gln  
                                  210                      215                      220  
 Asn Gln Leu Lys Gln Gln Glu Glu Asp Phe Arg Lys Gln Leu Glu Asp  
 225                                   230                      235                      240  
 Glu Glu Gly Arg Lys Ala Glu Lys Glu Asn Thr Thr Ala Glu Leu Thr  
                                  245                      250                      255  
 Glu Glu Ile Asn Lys Trp Arg Leu Leu Tyr Glu Glu Leu Tyr Asn Lys  
                                  260                      265                      270  
 Thr Lys Pro Phe Gln Leu Gln Leu Asp Ala Phe Glu Val Glu Lys Gln  
                                  275                      280                      285  
 Ala Leu Leu Asn Glu His Gly Ala Ala Gln Glu Gln Leu Asn Lys Ile  
                                  290                      295                      300  
 Arg Asp Ser Tyr Ala Lys Leu Leu Gly His Gln Asn Leu Lys Gln Lys  
 305                                   310                      315                      320  
 Ile Lys His Val Val Lys Leu Lys Asp Glu Asn Ser Gln Leu Lys Ser  
                                  325                      330                      335  
 Glu Val Ser Lys Leu Arg Cys Gln Leu Ala Lys Lys Lys Gln Ser Glu  
                                  340                      345                      350  
 Thr Lys Leu Gln Glu Glu Leu Asn Lys Val Leu Gly Ile Lys His Phe  
                                  355                      360                      365  
 Asp Pro Ser Lys Ala Phe His His Glu Ser Lys Glu Asn Phe Ala Leu  
                                  370                      375                      380  
 Lys Thr Pro Leu Lys Glu Gly Asn Thr Asn Cys Tyr Arg Ala Pro Met  
 385                                   390                      395                      400  
 Glu Cys Gln Glu Ser Trp Lys  
                                  405

<210> 79  
 <211> 476  
 <212> PRT  
 <213> Mus musculus

<400> 79  
 Met Gln Ile Leu Thr Glu Arg Leu Ala Leu Glu Arg Gln Glu Tyr Glu  
   1                                 5                                 10                                 15  
 Lys Leu Gln Gln Lys Glu Leu Gln Ser Gln Ser Leu Leu Gln Gln Glu  
                                  20                                 25                                 30  
 Lys Glu Leu Ser Ala Arg Leu Gln Gln Gln Leu Cys Ser Phe Gln Glu  
                                  35                                 40                                 45

Glu Met Thr Ser Glu Lys Asn Val Phe Lys Glu Glu Leu Lys Leu Ala  
 50 55 60  
 Leu Ala Glu Leu Asp Ala Val Gln Gln Lys Glu Glu Gln Ser Glu Arg  
 65 70 75 80  
 Leu Val Lys Gln Leu Glu Glu Glu Arg Lys Ser Thr Ala Glu Gln Leu  
 85 90 95  
 Thr Arg Leu Asp Asn Leu Leu Arg Glu Lys Glu Val Glu Leu Glu Lys  
 100 105 110  
 His Ile Ala Ala His Ala Gln Ala Ile Leu Ile Ala Gln Glu Lys Tyr  
 115 120 125  
 Asn Asp Thr Ala Gln Ser Leu Arg Asp Val Thr Ala Gln Leu Glu Ser  
 130 135 140  
 Val Gln Glu Lys Tyr Asn Asp Thr Ala Gln Ser Leu Arg Asp Val Thr  
 145 150 155 160  
 Ala Gln Leu Glu Ser Glu Gln Glu Lys Tyr Asn Asp Thr Ala Gln Ser  
 165 170 175  
 Leu Arg Asp Val Thr Ala Gln Leu Glu Ser Glu Gln Glu Lys Tyr Asn  
 180 185 190  
 Asp Thr Ala Gln Ser Leu Arg Asp Val Thr Ala Gln Leu Glu Ser Val  
 195 200 205  
 Gln Glu Lys Tyr Asn Asp Thr Ala Gln Ser Leu Arg Asp Val Thr Ala  
 210 215 220  
 Gln Leu Glu Ser Tyr Lys Ser Ser Thr Leu Lys Glu Ile Glu Asp Leu  
 225 230 235 240  
 Lys Leu Glu Asn Leu Thr Leu Gln Glu Lys Val Ala Met Ala Glu Lys  
 245 250 255  
 Ser Val Glu Asp Val Gln Gln Gln Ile Leu Thr Ala Glu Ser Thr Asn  
 260 265 270  
 Gln Glu Tyr Ala Arg Met Val Gln Asp Leu Gln Asn Arg Ser Thr Leu  
 275 280 285  
 Lys Glu Glu Glu Ile Lys Glu Thr Ser Ser Phe Leu Glu Lys Ile Thr  
 290 295 300  
 Asp Leu Lys Asn Gln Leu Arg Gln Gln Asp Glu Asp Phe Arg Lys Gln  
 305 310 315 320  
 Leu Glu Glu Lys Gly Lys Arg Thr Ala Glu Lys Glu Asn Val Met Thr  
 325 330 335  
 Glu Leu Thr Met Glu Ile Asn Lys Trp Arg Leu Leu Tyr Glu Glu Leu  
 340 345 350  
 Tyr Glu Lys Thr Lys Pro Phe Gln Gln Gln Leu Asp Ala Phe Glu Ala  
 355 360 365  
 Glu Lys Gln Ala Leu Leu Asn Glu His Gly Ala Thr Gln Glu Gln Leu  
 370 375 380  
 Asn Lys Ile Arg Asp Ser Tyr Ala Gln Leu Leu Gly His Gln Asn Leu  
 385 390 395 400  
 Lys Gln Lys Ile Lys His Val Val Lys Leu Lys Asp Glu Asn Ser Gln  
 405 410 415  
 Leu Lys Ser Glu Val Ser Lys Leu Arg Ser Gln Leu Val Lys Arg Lys  
 420 425 430  
 Gln Asn Glu Leu Arg Leu Gln Gly Glu Leu Asp Lys Ala Leu Gly Ile  
 435 440 445  
 Arg His Phe Asp Pro Ser Lys Ala Phe Cys His Ala Ser Lys Glu Asn  
 450 455 460  
 Phe Thr Pro Leu Lys Glu Gly Asn Pro Asn Cys Cys  
 465 470 475

&lt;210&gt; 80

<211> 435  
 <212> PRT  
 <213> Mus musculus

<400> 80

```

Met Gln Ile Leu Thr Glu Arg Leu Ala Leu Glu Arg Gln Glu Tyr Glu
 1          5          10          15
Lys Leu Gln Gln Lys Glu Leu Gln Ser Gln Ser Leu Leu Gln Glu
 20          25          30
Lys Glu Leu Ser Ala Arg Leu Gln Gln Gln Leu Cys Ser Phe Gln Glu
 35          40          45
Glu Met Thr Ser Glu Lys Asn Val Phe Lys Glu Glu Leu Lys Leu Ala
 50          55          60
Leu Ala Glu Leu Asp Ala Val Gln Gln Lys Glu Glu Gln Ser Glu Arg
 65          70          75          80
Leu Val Lys Gln Leu Glu Glu Glu Arg Lys Ser Thr Ala Glu Gln Leu
 85          90          95
Thr Arg Leu Asp Asn Leu Leu Arg Glu Lys Glu Val Glu Leu Glu Lys
 100         105         110
His Ile Ala Ala His Ala Gln Ala Ile Leu Ile Ala Gln Glu Lys Tyr
 115         120         125
Asn Asp Thr Ala Gln Ser Leu Arg Asp Val Thr Ala Gln Leu Glu Ser
 130         135         140
Val Gln Glu Lys Tyr Asn Asp Thr Ala Gln Ser Leu Arg Asp Val Thr
 145         150         155         160
Ala Gln Leu Glu Ser Glu Gln Glu Lys Tyr Asn Asp Thr Ala Gln Ser
 165         170         175
Leu Arg Asp Val Thr Ala Gln Leu Glu Ser Glu Gln Glu Lys Tyr Asn
 180         185         190
Asp Thr Ala Gln Ser Leu Arg Asp Val Thr Ala Gln Leu Glu Ser Val
 195         200         205
Gln Glu Lys Tyr Asn Asp Thr Ala Gln Ser Leu Arg Asp Val Ser Ala
 210         215         220
Gln Leu Glu Ser Tyr Lys Ser Ser Thr Leu Lys Glu Ile Glu Asp Leu
 225         230         235         240
Lys Leu Glu Asn Leu Thr Leu Gln Glu Lys Val Ala Met Ala Glu Lys
 245         250         255
Ser Val Glu Asp Val Gln Gln Gln Ile Leu Thr Ala Glu Ser Thr Asn
 260         265         270
Gln Glu Tyr Ala Arg Met Val Gln Asp Leu Gln Asn Arg Ser Thr Leu
 275         280         285
Lys Glu Glu Glu Ile Lys Glu Ile Thr Ser Ser Phe Leu Glu Lys Ile
 290         295         300
Thr Asp Leu Lys Asn Gln Leu Arg Gln Gln Asp Glu Asp Phe Arg Lys
 305         310         315         320
Gln Leu Glu Glu Lys Gly Lys Arg Thr Ala Glu Lys Glu Asn Val Met
 325         330         335
Thr Glu Leu Thr Met Glu Ile Asn Lys Trp Arg Leu Leu Tyr Glu Glu
 340         345         350
Leu Tyr Glu Lys Thr Lys Pro Phe Gln Gln Gln Leu Asp Ala Phe Glu
 355         360         365
Ala Glu Lys Gln Ala Leu Leu Asn Glu His Gly Ala Thr Gln Glu Gln
 370         375         380
Leu Asn Lys Ile Arg Asp Ser Tyr Ala Gln Leu Leu Gly His Gln Asn
 385         390         395         400
Leu Lys Gln Lys Ile Lys His Val Val Lys Leu Lys Asp Glu Asn Ser
 405         410         415

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Gln Leu Lys Ser Glu Val Ser Lys Leu Arg Ser Gln Leu Val Lys Arg  
 420 425 430  
 Lys Gln Asn  
 435

<210> 81  
 <211> 32  
 <212> PRT  
 <213> Homo sapien

<400> 81  
 Lys Gln Lys Ile Lys His Val Val Lys Leu Lys Asp Glu Asn Ser Gln  
 1 5 10 15  
 Leu Lys Ser Glu Val Ser Lys Leu Arg Cys Gln Leu Ala Lys Lys Lys  
 20 25 30

<210> 82  
 <211> 32  
 <212> PRT  
 <213> Mus musculus

<400> 82  
 Lys Gln Lys Ile Lys His Val Val Lys Leu Lys Asp Glu Asn Ser Gln  
 1 5 10 15  
 Leu Lys Ser Glu Val Ser Lys Leu Arg Ser Gln Leu Val Lys Arg Lys  
 20 25 30

<210> 83  
 <211> 352  
 <212> PRT  
 <213> Homo sapien

<400> 83  
 Met Gln Asn Leu Lys Gln Lys Phe Ile Leu Glu Gln Gln Glu Arg Glu  
 1 5 10 15  
 Lys Leu Gln Gln Lys Glu Leu Gln Ile Asp Ser Leu Leu Gln Glu  
 20 25 30  
 Lys Glu Leu Ser Ser Ser Leu His Gln Lys Leu Cys Ser Phe Gln Glu  
 35 40 45  
 Glu Met Ala Lys Glu Lys Asn Leu Phe Glu Glu Glu Leu Lys Gln Thr  
 50 55 60  
 Leu Asp Glu Leu Asp Lys Leu Gln Gln Lys Glu Glu Gln Ala Glu Arg  
 65 70 75 80  
 Leu Val Lys Gln Leu Glu Glu Ala Lys Ser Arg Ala Glu Glu Leu  
 85 90 95  
 Lys Leu Leu Glu Glu Lys Leu Lys Gly Lys Glu Ala Glu Leu Glu Lys  
 100 105 110  
 Ser Ser Ala Ala His Thr Gln Ala Thr Leu Leu Leu Gln Glu Lys Tyr  
 115 120 125  
 Asp Ser Met Val Gln Ser Leu Glu Asp Val Thr Ala Gln Phe Glu Ser  
 130 135 140  
 Tyr Lys Ala Leu Thr Ala Ser Glu Ile Glu Asp Leu Lys Leu Glu Asn  
 145 150 155 160  
 Ser Ser Leu Gln Glu Lys Ala Val Ala Lys Ala Gly Lys Asn Ala Glu

Asp	Val	Gln	His	165	Gln	Ile	Leu	Ala	Thr	170	Glu	Ser	Ser	Asn	Gln	175	Glu	Tyr
			180						185						190			
Val	Arg	Met	Leu	Leu	Asp	Leu	Gln	Thr	Lys	Ser	Ala	Leu	Lys	Glu	Thr			
	195						200						205					
Glu	Ile	Lys	Glu	Ile	Thr	Val	Ser	Phe	Leu	Gln	Lys	Ile	Thr	Asp	Leu			
	210						215						220					
Gln	Asn	Gln	Leu	Lys	Gln	Gln	Glu	Glu	Asp	Phe	Arg	Lys	Gln	Leu	Glu			
225					230					235					240			
Asp	Glu	Glu	Gly	Arg	Lys	Ala	Glu	Lys	Glu	Asn	Thr	Thr	Ala	Glu	Leu			
			245						250						255			
Thr	Glu	Glu	Ile	Asn	Lys	Trp	Arg	Leu	Leu	Tyr	Glu	Glu	Leu	Tyr	Asn			
		260						265						270				
Lys	Thr	Lys	Pro	Phe	Gln	Leu	Gln	Leu	Asp	Ala	Phe	Glu	Val	Glu	Lys			
	275						280						285					
Gln	Ala	Leu	Leu	Asn	Glu	His	Gly	Ala	Ala	Gln	Glu	Gln	Leu	Asn	Lys			
	290					295						300						
Ile	Arg	Asp	Ser	Tyr	Ala	Lys	Leu	Leu	Gly	His	Gln	Asn	Leu	Lys	Gln			
305					310					315					320			
Lys	Ile	Lys	His	Val	Val	Lys	Leu	Lys	Asp	Glu	Asn	Ser	Gln	Leu	Lys			
			325						330					335				
Ser	Glu	Val	Ser	Lys	Leu	Arg	Cys	Gln	Leu	Ala	Lys	Lys	Lys	Thr	Lys			
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<210> 84  
 <211> 11  
 <212> PRT  
 <213> Mus musculus

<400> 84  
 Val Ser Ile Glu Lys Glu Lys Ile Asp Glu Lys  
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